California's Latest Water Crisis:

Toxic Contamination in our Drinking Water

A Post-Hearing Report by the

Joint Legislative Audit Committee

Chairman, Assemblyman Scott Wildman

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Background

Long after the California Legislature declared that access to clean and safe drinking water was a right guaranteed for every Californian, a series of previously unidentified contaminants began appearing in California's drinking water. And although a host of toxic and dangerous chemicals have been found in California's groundwater, the invasion of one particular contaminant, a controversial fuel additive called MTBE (methyl tertiary butyl ether) has illustrated the systemic flaws in the statutory framework that was designed to protect California's water supply.

Because MTBE, unlike other petroleum contaminants, dissolves easily in water, travels at the same speed as water through the aquifers and doesn't degrade,[1] its appearance quickly has become a clear and present danger to California's water supply – so pervasive a threat that several communities have been forced to close down drinking waterwells.

And while the MTBE contamination is alarming, the negligence of the State regulatory agencies is even more disturbing. In fact, the agencies, despite having evidence of MTBE's proliferation in the State's drinking water, failed to respond in an expeditious manner and in some cases, may have compounded the problem by encouraging the premature closure of contamination investigations-- essentially removing all oversight from these cases.

The MTBE story reveals some serious deficiencies within the California regulatory structure and illustrates the crisis that can emerge when responsible agencies respond passively and reactively to such threats.

In California, MTBE was detected in drinking water supplies as far back as 1990 when its concentration level reached 500 parts per billion (PPB) – nearly 15 times the State's 1991 "action level" of 35 PPB – in two drinking water wells at the Presidio in San Francisco. The problematic nature of the chemical had already been documented four

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[1] "Chemical Threat to State's Water Wells," *San Francisco Examiner*, August 10, 1997

years earlier. In 1986, the firm Garrett and Associates established that *"MTBE with its quality for high solubility for water was a significant threat to groundwater."*[2] As early as 1988, a number of groundwater contamination cases had been documented.[3]

By 1995, MTBE had contaminated the drinking water in the City of Santa Monica, reaching levels of up to 250 PPB in seven of the City's primary drinking water wells. The city shut down the wells, effectively losing 71 percent of its available ground water supply in the process.[4]

By the end of fiscal year 1995-96, the State Water Resources Control Board (State Water Board or State Board) reported that they had identified approximately 7,200 sites where underground storage tanks (USTs) had leaked petroleum – and MTBE – into the groundwater.

Additionally, in 1996, 15 million gallons of MTBE contaminated water were found in the Santa Ana River in Orange County. If the contamination had not been discovered, the water would have been used for drinking. It was "treated" and dumped into the ocean instead.[5]

Although state regulatory agencies responsible for water quality, including the Department of Health Services (DHS) and the State Water Board, were made aware of these and other incidences of contamination, they failed to respond to the problem until at least six years after the first evidence of serious contamination appeared. When regulatory agencies did finally respond, in 1996, they merely recommended that public water systems begin testing for MTBE in the water supply.[6]

It wasn't until 1997 when the DHS, the agency ultimately responsible for the safety of the State's drinking water, adopted regulations requiring the monitoring of drinking water for MTBE contamination.

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[2] February 9, 1999 oral testimony of Azebiuke Akaba
[3] ibid
[4] "Chemical Threat to State's Water Wells," *San Francisco Examiner*, August 10, 1997/December 1998 *California's Drinking Water* report of the California State Auditor
[5] June 28, 1998, *Orange County Register*
[6] December 1998 *California's Drinking Water* report of the California State Auditor

The State Water Board – responsible for preventing and cleaning up contamination and storage tank leaks – appeared to be equally negligent. For example, the agency rarely discovered underground storage tank leaks until tanks were removed. According to the State Auditor, this was the case in 289 of the 345 leaks (or 84%) that were reviewed. In a study of the effectiveness of leak detection methods, the State Water Board found that of the 345 leaking tank cases reviewed, 149 sites were either admittedly unmonitored or had no record of monitoring. Compounding the problem, a number of the leaking tank owners never obtained proper permits.

Further, when contamination reached levels that forced intervention, the agency relied on the introduction of chemicals, instead of more effective methods.[7]

To date, it is estimated that MTBE has contaminated more than 10,000 sites statewide.[8] These sites include 13 drinking water wells in South Lake Tahoe,[9] 10 wells in Glenville, and a number of wells in Sacramento and Santa Clara Counties, where there were more than 300 reported releases of MTBE. Glenville has been forced to purchase bottled water for its residents, and South Lake Tahoe has spent in excess of a half a million dollars just in efforts to locate the source of the contamination.[10]

The MTBE crisis led one environmental group, Communities for a Better Environment, to file suit against eight oil companies for violating state law. The nonprofit group claims that the eight defendants were aware that MTBE pollutes the environment when it leaks from underground fuel tanks, during transport, or through underground pipelines.[11]

Likewise, a number of California legislators have reacted to the MTBE contamination by proposing stricter standards, including moratoriums on its use. And recently, California's Governor Gray Davis ordered a phase-out of MTBE.

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[7] ibid
[8] "Environmental Group Sues Oil Companies," *Associated Press*, August 6, 1998
[9] January 16, 1999, "MTBE Forces Closure of Well." *Sacramento Bee*
[10] August 7, 1998 "Environmental Group Sues Oil Companies over Use of Gasoline Additives," *Associated Press State & Local Wire*
[11] ibid

JLAC Chair, Assemblymember Scott Wildman, members of the Committee and other legislators, including Senator Byron Sher, believe that the MTBE crisis, while problematic on its own, is really indicative of a much broader problem – the failure of the State's regulatory agencies that are responsible for ensuring clean drinking water.

In addition to MTBE, a host of other contaminants have also been infiltrating California's water. One such contaminant, which, like MTBE, appears to be seeping out from leaking underground storage (or fuel) tanks (LUSTs or LUFTs) is benzene, a known carcinogen and cause of leukemia.[12]/[13] And underground tanks appear to be leaking statewide. One report states that approximately 31,000 of the 65,000 California underground storage tank sites have been identified as leaking. Only 14,000 of these sites have been cleaned, leaving 17,000 cases still open and requiring intervention.[14]

Until the problem of LUSTs has been solved, toxic gasoline ingredients, such as benzene, will "continue to enter our water," according to the Joint Legislative Staff Task Force on Government Oversight's January 20, 1998 briefing paper regarding the use of MTBE.[15]

LUSTs are only one of many sources of the water contaminants that plague California's water. Numerous other industrial chemicals and wastes such as chlorinated solvents, hexavalent chrome, perchlorates and nitrates have also infiltrated into California's water supply through various non-LUST-related sources. Many of these contaminants are serious health threats and/or known carcinogens.

Because of the inherent danger in these and other contaminants, it is vital to ensure that meticulous and diligent protective measures are taken by the State and its regulatory agencies. Although phasing out chemicals, such as MTBE, that may poison California's water is important, JLAC believes it is imperative to examine the regulatory failures and establish a more effective regulatory framework to ensure that future contamination is prevented. Toward this end, the Committee directed the California State Auditor and the

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[12] January 30, 1998 briefing paper, *The Battle Over California's Use of MTBE* by the Joint Legislative Staff Task Force on Government Oversight
[13] Air Resources Board News Release No. 96-16 (7/2/96)
[14] September 15, 1997, "Gas Additive's Needless Risk," *San Francisco Chronicle*

Bureau of State Audits to evaluate the performance of the responsible agencies and make recommendations regarding necessary improvements.

In December 1998, the Bureau of State Audits released its findings, which largely focused on the failures in agency responses to MTBE contamination. Some of the results included the following:

1. Although aware that leaking gasoline jeopardized California's drinking water, state regulatory agencies did not act "quickly or decisively to address this potential health hazard."[16]
2. Even though state regulatory agencies were aware of MTBE contamination as early as 1990, they did not react with appropriate testing regulations until seven years later – 1997. Additionally, they did not adopt emergency regulations which would have made enforcement actions viable and timely.
3. The State Water Control Board still hasn't specified guidelines or procedures for MTBE cleanup.
4. The agencies' oversight and monitoring systems are flawed and may fail to prevent contamination of drinking water.
5. The agencies have failed to enforce the State's Safe Drinking Water Act.
    a) The agencies have not ensured follow-up monitoring for contaminated sites.
    b) The agencies have not adequately notified the public about the chemicals found in their drinking water.
    c) The agencies have not adequately managed the "complete cleanup of chemical contamination of groundwater."
1. As of September 30, 1998, only 19 percent of storage tanks that the State Auditor surveyed had been certified as meeting their compliance deadline with the required upgrading to double walled tanks with improved leak protection and monitoring devices.

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[15] January 30, 1998 briefing paper, *The Battle Over California's Use of MTBE* by the Joint Legislative Staff Task Force on Government Oversight.
[16] December 1998, *California's Drinking Water* Report of the California State Auditor, p. 1

2. Nearly half of the storage tank operators surveyed broke the law and failed to report gasoline leaks in the required 24-hour period. Delays ranged from three to 773 days.
3. Tank owners and operators have failed to adequately assess and clean up contamination, and state agencies have not provided adequate oversight. In at least two cases of contamination, the responsible parties didn't remove the contaminants and surrounding soil for seven years. In another case, the responsible party waited 10 years before performing any site characterization.
4. Several of the district offices and primacy agencies failed to insure that the required sampling and testing of the drinking water was performed, leaving water quality uncertain.

The regulatory agencies forwarded mixed responses regarding both the audit and the degree of danger posed by the chemical MTBE, some of which raised additional concerns. For example, Walt Pettit, Executive Director of the State Water Resources Control Board, acknowledged that "releases containing MTBE represent a significant threat to California's groundwater resources."[17] However, Dave Spath, the Division Chief of the Department of Health Services, minimized its significance. Spath told the *Sacramento Bee* newspaper that the presence of MTBE in some groundwater supplies did not meet the legal definitions of a public health emergency and stated that the auditor "jumped to a conclusion."[18]

The disturbing findings of the audit, the responses from the State agencies and additional evidence of water contamination led the JLAC to further probe the system that failed to protect California's drinking water and to examine the ability of regulatory agencies to actually respond to water safety threats. *"Other chemicals that may prove to be hazardous may also exist, and we have to be in a position to respond very quickly to other kinds of contamination, not just MTBE,"* said JLAC Chair Scott Wildman.[19]

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[17] December 1998, *California's Drinking Water* Report of the California State Auditor
[18] December 24, 1998 "Auditor Jumped Gun on MTBE Risk, Official Says, *Sacramento Bee*
[19] Oral statement of JLAC Chair Scott Wildman, February 9, 1999

In an effort to gather the information needed to properly respond to the problem, the Joint Legislative Audit Committee, along with the Assembly Committee on Environmental Safety and Toxic Materials, convened an informational hearing on February 9, 1999 at the State Capitol in Sacramento. The Committees heard testimony from a number of witnesses and experts, including:

- Kurt Sjoberg, California State Auditor/Bureau of State Audits
- Steve Hendrickson, Bureau of State Audits
- Walt Pettit, Executive Director, State Water Resources Control Board
- Dave Spath, Division Chief, Department of Health Services
- Dr. Graham Fogg, Ph.D., University of California, Davis, Hydrology Program
- Bonnie Holmes-Gen, Sierra Club of America
- Chris Strohm, Board of Directors, South Lake Tahoe Public Utility District
- Craig Perkins, City of Santa Monica
- Kenneth Williams, Santa Ana Regional Water Quality Control Board
- Jack Miller/Seth Daugherty, County of Orange Health Care Agency, Environmental Health Division. Daugherty also co-authored a report on the occurrence of benzene and MTBE below the water table in O.C.
- James Crowley, Underground Storage Tank Program Manager, Santa Clara Valley Water District, San Jose, CA
- Ed Manning, Advocate for Western States Petroleum Association
- Anne Happel, Ph.D., Lawrence Livermore National Laboratory
- Jaqueline Lambrichts, Member, Technical Board of Advisors, Friends of the LA River/former employee at Los Angeles Regional Water Quality Control Board
- Azebiuke Akaba, Environmental Scientist, Communities for a Better Environment
- Frank Goldman, State Certified Hydrogeologist/Environmental Consultant
- Shahlah Farahnak, P.E., State Water Resources Control Board, Project Manager and UST Workgroup Chair

Summary of Recommendations

As a result of the audit, the hearing and further research, JLAC makes the following recommendations.

- The State should further examine the structure of the regulatory process that is intended to protect California's water to determine what, if any, structural changes are needed.
- After study, the State should develop a more effective and clear system of accountability.
- The State should mandate an aggressive Groundwater Vulnerability Analysis and Source Water Protection Plan. Within said plan, State of California licensed subsurface hydrogeologists, State of California licensed professional civil engineers and groundwater scientists with well-established records of academic achievement will analyze and give State regulators a better understanding of the groundwater systems in which the contaminants are occurring. It may choose to assign the task to the Department of Water Resources. Within the analysis and plan, the responsible agency should compile data on the location, natural quality of groundwater resources, existing controls of water resource use and details of the hydrogeologic conditions of each groundwater basin.
- The Legislature should set prompt yet reasonable deadlines on the implementation of the pending GIS (geographic information system) and require all State environmental protective agencies and resource agencies to participate and submit relevant data into the centralized system.
- The Legislature should require that the GIS be made accessible to the public.
- The GIS should, at minimum, contain name, location, type, and status of every site that has impacted or could impact the quality of waters within the state. Data should include data from all sites currently or formerly under the jurisdiction of the US Environmental Protection Agency (EPA), the California Department of Toxic Substances Control (DTSC), State and Regional Water Boards and local governments.
- The GIS should also map production wells, monitoring wells, groundwater recharge areas, streets, city and county boundaries, and local and regional groundwater contaminant plumes. Lithologic and hydrogeologic data from the Department of Water Resources should be used or developed in support of this

project, such that migration of contaminants can be evaluated and the impact to water resources can be determined.

- The Legislature should disallow any new chemical from being introduced in mass without first reasonably testing it and having its behavior and the ramifications of its presence and toxicity understood.
- The Legislature should require the State Water Resources Control Board to complete the development of a pro-active current surface and ground water management plan that includes a routine well investigation program. The plan should be updated annually according to new circumstances.
- The Legislature and the Bureau of State Audits should work together to designate a California Water Oversight Committee, comprised of the various stakeholders to oversee the management plan, the guidelines and the GIS. Among other things, the Oversight Committee would create a system of accountability for regulators and enforcement officials.
- The State Water Board in conjunction with the Regional Water Boards, local agencies and the water community stakeholders should develop an umbrella policy that provides minimum guidelines on groundwater protection and cleanup.
- The State should evaluate the continuation of the Cleanup Fund. If the Fund is continued, it should not have any influence on the technical o regulatory progress of site investigation, cleanup and closure.
- The Legislature should designate those environmental violations that may cause serious health risks as criminal violations.
- Law enforcement should evaluate whether members of the petroleum industry should be held accountable for the MTBE catastrophe and its subsequent costs to the State of California.
- The Legislature should also establish the following:
  - More stringent deadlines for permitting storage tanks
  - Strong penalties for responsible parties that are not in compliance with investigation, clean up, reporting or permitting requirements
  - Requirements for all water systems, including small systems, to electronically submit water testing results to the DHS

Current Law

The California Legislature has declared that pure and safe drinking water is a right for every citizen of California. It specifically reads,

"Every citizen of California has the right to pure and safe drinking water."

It further declares that the water delivered by the public water systems *"shall at all times be pure, wholesome and potable."*[20]

The State Water Code added the following language:

> *"The people of the state have a primary interest in the conservation, control and utilization of the water resources of the state, and that the quality of all the waters of the state shall be protected for use and enjoyment by the people of the state."*[21]

Responsibility for ensuring the safety and purity of California's water falls on several agencies, but primarily upon the Department of Health Services (DHS) and the State and Regional Water Boards (State Water Resources Control Board and Regional Water Quality Control Boards).

Kurt Sjoberg, California State Auditor, explained during his hearing testimony.

> *"The Department of Health Services is responsible for the quality of the water that we drink. However, the Cal EPA, through its State and Regional Water Boards, has a role in the oversight and cleanup of the contamination around sites, such as gas tank sites, especially with the ten-year plan that just completed this past December of removing these older tanks and replacing them with more modern equipment. Various county*

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[20] California Health and Safety Code Section 116270
[21] California Water Code Section 13000-13002

level organizations also have a role. Usually, the environmental health departments of counties have a role in water, and the various local entities usually through some county or city activity are also responsible for some of the lower level review that occurs with respect to contamination, site cleanup, and so forth, early monitoring and so forth."[22]

Dave Spath, Division Chief for the Division of Drinking Water and Environmental Management within the Department of Health Services, explained the DHS's role.

"The Department (DHS) is responsible for permitting and regulating the State's public water systems. This includes statewide program of surveillance, investigation, monitoring, enforcement, and consultation to insure that the 8,500 public water systems in the state are in compliance with the laws and regulations of both the Federal and the State Safe Drinking Water Act(s). We also have delegated the authority for oversight of smaller water systems to the local county health departments, which we call local [primacy] agencies. That entails about 4,600 water systems that have less than 200 services connections and are non-transient, non-community systems, such as schools and factories. They have individuals that reside there during the day and would drink water during the day at that facility. They also regulate what are called transient water companies, those such as restaurants where you have an individual that may only be at that establishment once every month or so or even less possibly. So the 34 counties have that delegation, and we regulate the remaining water systems in 24 counties, so there is that split responsibility. That's part of the existing California Safe Drinking Water Act that allows us to do that."[23]

While the Department of Health Services is empowered to establish the drinking water regulatory program, the *"coordination and control of water quality"* falls upon the *"State*

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[22] February 9, 1999 Oral testimony of State Auditor Kurt Sjoberg
[23] February 9, 1999 oral testimony of Dave Spath

and Regional Boards," according to California's Water Code, section 13001.[24] In fact, the Water Codes designated the State Board as the *"State's water pollution control agency for all purposes stated in the Federal Water Pollution Control Act and any other federal act."*[25]

Within its responsibilities, the State Board is charged with the following:

> *"To annually determine state needs for water quality research, recommend projects to be conducted and administer any statewide program of research in the technical phases of water quality control."*[26]

Further, the State Board is mandated:

> *"To coordinate water-quality-related investigations of state agencies. . . evaluate the need for . . . investigations to effectively develop and implement statewide policy . . . prepare and implement a statewide water quality information storage and retrieval program . . . maintain an information file on water quality research and other pertinent matters."*

Walt Pettit, Executive Director for the State Water Resources Control Board, explained the structure of responsibility, specifically with the underground tank program, from which the MTBE outbreak occurred. The structure was created in 1983, Pettit said.

> *"We have local implementing agencies, which are the local county fire departments, county health departments, whomever, that issue the permits and enforce the underground tank program. They permit the tank locations and enforce tank requirements. Then we have local oversight programs, which was set up in legislation in the late 1980s, in which local agencies can apply to our board. Under contract, they do the oversight*

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[24] California Water Codes, section 13001
[25] California Water Codes, section 13160
[26] California Water Codes, section 13162

work of the cleanup. So instead of the Regional Board doing it all, the local agency, if they are designated, can do it. We finance that operation through the cleanup fund, and there are presently about 20 of these oversight agencies. They work with the Regional Boards in different ways. In some areas, the oversight agency does most all of the work with minimal involvement by the Regional Board. In other areas, the Regional Boards do most of the oversight work. There's about every mix you could conceive of in between I suppose. So the relationships can get complicated. The State Board is responsible for the underground storage tank cleanup fund, for overseeing the Regional Boards and serves as an appellate body to Regional Board decisions. When we do find problems in relation to drinking water, the Department of Health Services, of course, becomes a key player. So it is a rather complex organizational structure."[27]

The complex structure appears to inherently create a greater opportunity for communication gaps, which was of particular concern for JLAC Chair Wildman, who noted:.

"It's hard to identify where you're going to fix the problem if you have such a complex organizational structure. It's very difficult when we don't have standards and an understanding of where those responsibilities lie for the legislature to understand how we're going to fix parts of the program."[28]

Sjoberg concurred with the Chair, stating that the multiplicity of responsibility required more of the water protection agencies, particularly in the form of coordination.

"That demands more of government than traditionally just having one department responsible for everything. And what that demands, among other things, is good coordination. Because, clearly, if there's a site

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[27] February 9, 1999 oral testimony of Walt Pettit
[28] February 9, 1999 oral statement of Scott Wildman

that's identified in which there's a tank leak that has some problem and that's a

State or regional water control board identification, what's critical, of course, is it's the influence of that site to the groundwater in the vicinity. And that, of course, is a Department of Health Services responsibility. I think it's important to understand that the regulatory role of the State and local agencies is quite diverse. So the interchange and the sharing of data between these two entities is critical. We found that wasn't always working as one would hope."[29]

[29] ibid

The Scope of the MTBE Catastrophe

While the full extent of MTBE contamination is still unknown, it appears that more than 10,000 shallow aquifer sites are contaminated with MTBE, according to witnesses who appeared before the Committee. In some California cities, the contamination was at such levels that the cities that were forced to close wells were left with only a fraction of their drinking water resources.

MTBE appears to be escaping into the water aquifers from Leaking Underground Storage Tanks and delivery systems (LUSTs) or (LUFTs). At the end of the March 1999 quarter, 34,525 LUSTs were reported by the nine Regional Water Boards that service California. The number represented a 365-LUST increase over the previous quarter.[30] Most of the LUSTs likely contained MTBE.

Dr. Anne Happel, who recently headed a recent study for Lawrence Livermore Laboratories elaborated on the institution's 1998 findings.

> *"We estimated that there are greater than 10,000 leaking underground storage tank sites throughout California where MTBE is present in the shallow groundwater. This widespread distribution of contaminant sources is of great concern due to MTBE's inability to degrade in the subsurface. MTBE . . . may present a cumulative contamination hazard."*[31]

In most of the MTBE impacted sites, concentration levels of the fuel additive are extraordinarily high, and many water supply wells are affected, according to Dr. Graham Fogg, a UC Davis hydrology expert. In fact, according to Dr. Fogg, the impact is still not fully understood:

> *"[In the open LUFT sites], MTBE concentrations are high . . . ranging from 100 parts per billion [PPB] to more than a million [PPB], with 64%*

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[30] State Water Resources Control Board LUSTIS Quarterly Report, April 1999
[31] February 9, 1999 oral testimony of Anne Happel (sp?)

of the sites registering more than 100 parts per billion. Only about 21% of the water supply wells have been tested for MTBE by September 1998. Nevertheless, UC estimated that 65 to 165 public supply wells have detectable levels of MTBE, and the number of impacted private wells is probably on the order of 1,000. And model simulation experiments show that . . . the risks of impact will continue to grow substantially well into the next century, especially if aggressive remediation steps are not taken. Delay of the site characterization and remediation measures will result in ever-increasing costs in declining feasibility of MTBE recovery or containment at individual sites."[32]

In Orange County, the Regional Water Quality Control Board began monitoring its USTs for MTBE in mid-1995 prior to any guidelines from the State Water Board or the Department of Health Services. There, the contamination was growing and spreading, according to the data. Kenneth Williams, a UST program manager for the Regional Board discussed his findings.

"We felt that MTBE would be a concern to UST oversight [because] the compound would not degrade and may persist long enough to show up in drinking water wells. We started asking the cases in our jurisdiction to monitor for MTBE, and we started compiling that data. And indeed, we were seeing high concentrations at many of our underground storage tank sites. Over the last three years, the data has shown that the concentrations of MTBE on average has increased. For example, in the 500 sites that I've looked at, the number of sites that exceed 100,000 parts per billion has grown from approximately 3% of the total to close to 8% in the current, the most recent, quarter. And of larger concern, the sites that exceed 1,000 parts per billion increased from roughly 40% to . . . 55% now. So . . . sites that are in the low hundreds of PPB [will] make up a majority of the sites in our jurisdiction. Other regions started asking for that kind of data, and they've seen the same sort of patterns

[32] February 9, 1999 oral testimony of Graham Fogg

throughout the state, and now, indeed, we've started to see hits in drinking water wells increasing monthly."[33]

Compounding the contamination, investigation and cleanup are sorely remiss on the part of the State and Regional Boards, according to James Crowley, Underground Storage Tank Program Manager for the Santa Clara Valley Water District.

"There's a lack of prompt investigation and cleanup at MTBE sites. Of the over 10,000 MTBE release sites in California, I estimate that less than 15% of these MTBE sites are properly investigated, and less than 5% have initiated any form of effective cleanup. And we believe this is unacceptable. It is not appropriate to delay cleanup until a water supply well is contaminated."[34]

It appears that while MTBE monitoring and cleanup was being neglected, the contaminant continued to invade many communities' water sources, some of which were devastated. For example, the City of South Lake Tahoe lost a third of its drinking water supplies, and Santa Monica lost 71 percent of its drinking water supplies.

Chris Strohm, Vice President of the South Tahoe Public Utility District, described the South Lake Tahoe disaster.

"I'm a lay official . . . elected like you. I'm a desperate man representing a desperate district [of] about 30,000 people. We're looking at some serious, serious problems with no short-term solutions. I'd like you to imagine that one of your aides told you . . . that one-third of your wells were shut down due to MTBE, that your population in a couple months and demand for water is going to triple, that there are at least ten plumes of MTBE in your aquifer. And perhaps most important of all, you don't

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[33] February 9, 1999 oral testimony of Kenneth Williams
[34] February 9, 1999 oral testimony of James Crowley

have another source to turn to. You do not have another source to turn to. Well, that imaginative story is a nightmare for us. It is reality."[35]

While Strohm believed many to be responsible for the catastrophe, including the petroleum manufacturers, he largely blamed State agencies, as they had been notified in 1984 when the MTBE plume was first identified and reminded repeatedly, Strohm said.

"We are placing some blame on the State agencies, and we agree with the audit's findings. I'll retell the story of just one of ten [MTBE] plumes and the State's response. Although the auditor just went to 1992, this plume started back in 1984 when our crews were digging a ditch across from a gas station for a water line. The gasoline fumes were so strong across the street that they were afraid they'd strike a spark and have an explosion. That was in 1984. The State Regional Board was notified and reminded numerous times of this plume. It wasn't until five years later, in 1989, that the tanks were removed. But the existing plume threatened homes, businesses, and one of our large wells. In 1990 the Regional Board issued a cleanup order with a 1992 deadline. The responsible party did not meet the deadline, and the Regional Board did not follow-up. Later in 1992 the Regional Board required a work plan for a corrective action. It had to be done by 1993. 1993 came and went. In 1994 the responsible party finally produced a work plan -- no action in cleaning up the plume or defining it -- just a plan. In April of 1997 we delivered a letter to the Regional Board stating our utter frustration. We copied the State Board; we copied you legislators, and we copied the press to try to hold the Regional Board accountable. [In the same timeframe] in 1997, the State Board did an internal audit of the Regional Board on underground fuel tanks and gave them a clean bill of health . . . This [was] a whitewash. Today, the extent of the plume has not been fully determined, and cleanup has not occurred. And while we're holding these meetings, this and at least nine other plumes are spreading, and in some of our soils, they spread one foot a day -- one foot a day. You see standing before you right now California's

[35] February 9, 1999 oral testimony of Chris Strohm

future. If you don't like what you see, then act. Make the State agencies act, not just promise to act. We can't wait."[36]

Similarly, Santa Monica lost 71 percent of its drinking water supplies, and despite cries for help from the State agencies, the city was left on its own to deal with the disaster. The clean up ultimately will cost over $100 million. Craig Perkins described their situation.

"Santa Monica's drinking water supplies were ambushed by MTBE in late 1995. In a lab report from our regular water well testing in August of 1995, we discovered the presence of MTBE in two of our wells, a chemical we had not asked the lab to look for. There was no data available on MTBE contamination in the capture zones of our two major well fields as no testing for MTBE had ever been required of leaking underground storage tank sites. We were entirely without regulatory guidance at this point as to what we should do and realized very quickly that we [needed] to seize control of solving the problem. We began a regular testing program for all our city water wells [and] quickly discovered that MTBE levels were not only increasing but spreading to other wells. We very aggressively pressed the [Los Angeles] Regional Board, the Department of Health Services, the U.S. EPA, and every other State, Federal, and local agency we could think of to come to our aid and lend a hand. We realized, however, very quickly that if we didn't seize control of solving the problem, there was no one out there that was willing to step to the plate and take responsibility. We were forced into the extraordinary position of having to determine for ourselves what needed to be done to protect the health of our community and our groundwater resources and what steps needed to be taken to fix the contamination problem. Between February of 1996 and August of 1996, we shut down seven of our total eleven water wells, which represented approximately one-half of our total city water demand and over 70% of our local groundwater production."[37]

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[36] ibid
[37] February 9, 1999 oral testimony of Craig Perkins

Making matters worse, the mass contamination occurred during a time when the State Water Board was rushing to close investigation on contamination cases, which essentially removed all oversight. Perkins testified:

> *"We were dismayed to discover that concurrent with our efforts to identify the sources of contamination and figure out what had happened to our wells, the Regional Board had embarked on a frantic effort to [stop oversight on] as many underground storage tank sites as possible based on the new State policy, which emanated from the Lawrence Livermore report."*[38]

It was only because of a singular Regional Water Board employee's defiance of the State Water Board's directive to close contamination cases that Santa Monica was able to continue investigation of nearby LUSTs and to eventually trace some of the contamination sources. Perkins told the story.

> *"Due to the independent decision of a Regional Board staff member to collect the files and hide them under his desk during that period, we were able to insure that none of the sites around our main well fields were closed."*[39]

The City's discoveries were shockingly disturbing. Perkins explained:

> *"At our Arcadia site, we discovered that the gas station 300 feet away from our water well had a 10-year history of leaks – with no notification ever having been given to the city by either the responsible party or the Regional Board, and no cleanup activities had ever been implemented. Finally, we were stunned to discover that within a one-mile radius of our main well field, the Charnoff well field, there were over 24 leaking*

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[38] ibid
[39] ibid

underground storage tank sites, either current or past, and two high pressure gasoline pipelines, all of which we were, up to that point, unaware."[40]

In the end, the City officials discovered they weren't alone.

"The data, which has accumulated over the past three years, however, has proved that Santa Monica is not THE iceberg but rather the tip of the MTBE iceberg. And we're facing now in our main well field is more than a $100 million cleanup effort, which would represent a doubling of our customers' water rates for a ten-year period."[41]

[40] ibid
[41] February 9, 1999 oral testimony of Craig Perkins

Institutional Failure and Imminent Threat

With over 10,000 sites contaminated with MTBE, it appears that both the DHS and the State Water Board have failed in their duties to protect California's water from such contaminants, despite having evidence of its rapid proliferation, according to Sjoberg.

More troubling than a singular contaminant such as that of MTBE, however, is that several other contaminants and toxic chemicals may be poised to cause even greater damage than MTBE, according to a panel of scientists interviewed by JLAC. While MTBE devastated some communities' water sources, it is only one of a host of toxic materials or dangerous chemicals that is poisoning California's drinking water.

JLAC Chair, Scott Wildman, elaborated on the Committee's concern:

> *"We are particularly concerned about the ability of regulatory agencies to actually respond to crises that may develop. Aside from gasoline compounds such as MTBE, benzene, toluene and others, there have been recent reports of very high concentrations of carcinogens such as [hexavalent] chrome detected in groundwater below school sites in Los Angeles and in city wells in the San Fernando Valley. Other chemicals that may be hazardous may also exist, and we have to be in a position to respond very quickly to other kinds of contamination, not just MTBE. MTBE was easily identifiable because of the obviousness of its presence, its smell. Other [less obvious] contaminants could arise and we want to assure that in the future it doesn't take us such a long time to be able to react."*[42]

The University of California at Davis's Dr. Graham Fogg agreed that MTBE may not be the water's worst catastrophe. A host of other contaminants may infest and devastate a greater portion of California's water.

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[42] February 9, 1999 statement by Assemblymember Scott Wildman

"I do not think that MTBE is the most worrisome groundwater quality problem faced by the state today. Non-point sources, such as nitrates, pesticides, irrigation drainage, salinity potentially will wreak far greater havoc."[43]

Similarly, employees of water protection agencies in Southern California have expressed greater concern about contaminants such as chlorinated solvents and other industrial chemicals poisoning California's drinking water. In a November 25, 1998 letter to the Los Angeles Regional Water Quality Control Board, the Water Replenishment District (WRD) of Southern California acknowledged that the contamination by some Volatile Organic Compounds (VOCs) may have worsened.

"Chlorinated solvents and other contaminants are impacting a growing number of groundwater production wells within our service area."[44]

In fact, the Upper Los Angeles River Area Watermaster reported that over half of the wells in the region were contaminated with above maximum contaminant levels (MCLs) of TCE (trichloroethylene). A quarter of the wells were found to be contaminated with above MCLs of a similar solvent, PCE (tetrachloroethylene), in the 1997-98 year.[45] The presence of these industrial chemicals caused a mandatory closing of several water wells in the cities of Glendale and Burbank, according to a telephone interview with Watermaster Melvin Blevins.[46]

However, despite the prevalence of multitudes of contaminants, it was the MTBE contamination that cast a light onto the chronic problems of the regulatory structure in California's protective bodies, Fogg said.

"The MTBE issue helps illuminate needed changes in our groundwater protection and cleanup strategies."[47]

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[43] February 9, 1999 Oral testimony of Graham Fogg
[44] November 25, 1998 letter from Thomas Holliman to Dennis Dickerson
[45] May 1999 report of the Upper Los Angels River Area Watermaster
[46] Note: TCE and PCE are hazardous substances generally used for machinery degreasing, dry cleaning and metal plating.

Institutional Neglect: 15 Years of Warnings

The Water Boards and the Department of Health Services knew of the potential disaster at least as far back as 1990, when MTBE plagued two drinking water wells in the Presidio in San Francisco, according to the State Auditor.

However, the agencies ostensibly had even earlier notification than 1990. Six years prior to the Presidio contamination, in 1984, the City of South Lake Tahoe had reported one of several MTBE plumes to the State and Regional Water Boards. City officials repeatedly reminded the agencies but have never received a satisfactory response, and cleanup still has not occurred, according to Strohm.

Additional knowledge arose about MTBE contamination and its recalcitrant behavior in the late 1980s. Azebiuke Akaba, Communities for a Better Environment's staff scientist, testified:

> *"In 1986 there was a study done by Garrett and Associates, which established that MTBE with its quality for high solubility for water was a significant threat to groundwater. And in 1988, the EPA [reported] concern about MTBE contamination of groundwater, although at that time there were only a few cases . . . documented. They were evaluating it and conducted studies both in terms of [health impact and] groundwater contamination. It's curious to me during this period of time, with this evidence, that the State and Federal agencies ignored the evidence. I think it should be their job to protect the most valuable resource that we have – our drinking water."*[48]

In 1993 at a meeting of the Los Angeles Regional Water Board, a geologist, Jaqueline Lambrichts, introduced technical manuals dated 1992 from New Jersey to aid with procedures that hadn't yet been used in California. One of the 1992 New Jersey

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[47] February 9, 1999 oral testimony of Graham Fogg
[48] February 9, 1999 oral testimony of Azebiuke Akaba

requirements was MTBE analysis in UST discharge areas. The Regional Board dismissed the information, Lambrichts said during her testimony.

By 1995, the City of Santa Monica had made its frantic attempts to secure help with its MTBE disaster by "aggressively" contacting the DHS and State and Regional Water Boards.

Concurrently, the State Legislature commissioned a study of water contamination, which included MTBE, pursuant to Senate Bill 1764. Dr. Fogg called the MTBE menace "common knowledge" at that time.

> *"At the time the committee was deliberating [mid-1995], due mainly to data from the U.S. Geological Survey, nationwide data on MTBE, it was common knowledge among the committee members of this MTBE problem. The committee deliberations were in public and State Board members were present. It had been discussed."*[49]

1995 was also the time when the Air Resources Board and several oil companies had reported concerns about the additive, according to Holmes-Gen.

> *"Years ago, various parties faxed and mailed information to me [showing] that several oil companies were very well aware of the properties of MTBE, its unique properties and how it moves further and faster in the soil and water than other gasoline contaminants. So it is just hard to believe that the information was not somehow available to the State. It was clearly available. In May 1995, the California Air Resources Board [CARB] urged the Department of Health Services to conduct a pilot study of MTBE in urban area drinking water because earlier that year, a U.S. Geological Survey report warned that MTBE from reformulated gasoline was found in shallow groundwater in urban areas across the United States. I don't know why the Department of Health Services didn't comply with this request that the Air Resources Board submitted, but they did not comply. And that was during CARB's process*

[49] February 9, 1999 oral testimony of Graham Fogg

of evaluating reformulated gasoline formulas when they were adopting new regulations."[50]

In early 1996, the SB1764 Committee released its results, which included observations of MTBE and recommendations regarding remediating its contamination.

Fogg, who had participated in the study, reiterated a few of the study's pertinent findings during the hearing:

"[In] Conclusion 10 [of SB1764], the committee recommended that LUFT site characterization should include monitoring of soil and groundwater for additives like MTBE. And when a recalcitrant fuel additive is present, the risk to human health, the environment and water resources should be considered greater than if it were not present. Two other conclusions are [also] particularly relevant to the MTBE problem. Conclusion 10 states, I quote, 'The relatively recent use of fuel oxygenates that are recalcitrant to biodegradation, primarily MTBE, has created the potential for contamination of much larger volumes of groundwater than when such additives were not used. MTBE has been added in significant quantities to fuels in California only within the last five to ten years, and previous evaluations of leaking underground fuel tank impacts on groundwater, including Lawrence Livermore and National Labs studies, have not accounted for this relatively new threat.'"[51]

At that time, the SB1764 Committee realized the potential crisis due to the inordinate number of LUFT sites and the State's ability to respond to them. Fogg continued:

"'The great number of LUFT sites has outrun the number of available qualified personnel. Consequently, the LUFT site characterization and evaluation process suffers from a lack of both consulting and regulatory practitioners who are knowledgeable about risk assessment methods and

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[50] February 9, 1999 oral testimony of Bonnie Holmes-Gen
[51] February 9, 1999 oral testimony of Graham Fogg

the subsurface hydrological processes that control risks posed by the LUFT sites.'"[52]

As a result of its concern, the committee recommended that the board initiate training and recruitment programs in order to be able to remedy the numbers of LUFTs.

". . . nothing the State can do with respect to procedures and regulatory protocols can substitute for adequately qualified personnel. Unfortunately, the Board [will] have great difficulty finding such people in the current job market."[53]

Despite all the warnings of a pending disaster, both agencies appear to have ignored the mounting evidence of MTBE's proliferation and the SB1764 Committee's warnings and recommendations, until 1996-1997 when the contaminant had already wreaked havoc on several water delivery systems, according to the State Auditor. The agencies' oversight and monitoring systems are still deemed inadequate and flawed by the Bureau of State Audits, and the agencies still haven't adequately managed the "complete cleanup" of groundwater contamination.

In summary, Sjoberg said the following about the two departments' tardiness:

"We saw the 1990 experience and the later ones, culminating in the vast majority of information being focused around 1995 and '96. We are in '99 and yet still several of those major efforts have not been completed."[54]

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[52] ibid
[53] ibid
[54] February 9, 1999 oral testimony of Kurt Sjoberg

Knowledge of MTBE's Health Effects

Evidence that MTBE had serious effects on human health began from as far back as 1991, according to Akaba, who's organization, Communities for a Better Environment, has filed suit against eight oil companies in an effort to establish funds to clean up MTBE water contamination. He reported the following:

> *"In 1991 there were studies conducted by Texaco which said that the workers were being exposed and were showing up with health effects like respiratory irritation, dizziness, neurotoxicity, burning throat. And in 1992, when MTBE was introduced in Alaska, people reported the same health effects. MTBE is known to cause acute human health defects. It does break down into a carcinogen, formaldehyde. It should be listed, and we have made that recommendation, on the Prop. 65 [list], so that informed consumers can make a decision and dictate what they wan in the market"*[55]

In more recent 1997 studies, toxicologists have found workers and others at gasoline stations were developing MTBE antibodies, according to Akaba's testimony.

Federal research has also shown that the additive may cause cancer in laboratory animals.[56]/[57] Rats and mice exposed to MTBE developed lymphomas, leukemia and tumors in their kidneys, livers and testicles.[58]

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[55] February 9, 1999 oral testimony of Azebiuke Akaba
[56] "Group Sues nation's Oil Giants, *Ventura County Star*, August 7, 1998
[57] August 7, 1998, "Environmental Group Sues Oil Companies," *Associated Press State & Local Wire*
[58] September 15, 1997, "Gas Additive's Needless Risk," *San Francisco Chronicle*

The Debilitating State Policy

While the State agency neglect and inaction likely aided MTBE's infestation into the aquifers, a December 1995 State Water Board directive may have been more debilitating to California's water. This policy exacerbated the problem by promulgating procedures to rush the closure of LUST contamination cases, which essentially removed all oversight on those sites, without adequate assessment.

Many of the closures may have been premature and served to allowed contamination to spread further into the groundwater, essentially unnoticed. Fogg discussed during his testimony.

> *"Regardless [of the widespread knowledge of MTBE], on December 8, 1995, the board issued a letter encouraging the rapid closure of low risk leaking underground fuel tank sites without even stipulating the need for data on MTBE in the site assessment characterization."*[59]

The policy that directed agencies to rush the removal of oversight despite the possibility of contamination also called for *"passive remediation instead of active cleanup,"* according to Sierra Club's Bonnie Holmes-Gen.[60] She further described the orders.

> *"The State Water Board's Interim Guidance of December 1995 stated that contamination should not be actively cleaned up if there are no active drinking water wells within 250 feet. In a letter to Regional Boards and other local agency directors, the State Water Board Executive Director stated that cleanup oversight agencies should proceed aggressively to close [eliminate oversight on] low-risk soil-only [contamination cases. For cases affecting 'low risk' groundwater, he [directed] monitoring instead of active remediation."*[61]

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[59] February 9, 1999 oral testimony of Graham Fogg
[60] February 9, 1999 oral testimony of Bonnie Holmes-Gen
[61] ibid

This policy has had numerous adverse affects, according to Holmes-Gen:

> *"The legacy of this policy has been Regional Board inaction on underground tank cleanups. Reports from the field are that cleanups have been seriously delayed or stopped altogether as a result of the State's policies. For example, shortly after the Interim Guidance was issued by the State Board, the North Coast Regional Board sent out letters announcing that property owners would no longer be required to clean low risk contamination from leaking tanks. Another clear example of the State policy's adverse impact was in Sacramento. In 1994 Regional Board staff had discovered petroleum fuel contamination, benzene, toluene, ethyl benzene and xylene, in shallow groundwater less than 500 feet from a drinking water well. Although the Board continued monitoring the contamination, no cleanup order was ever issued, and the State Department of Health Services was not notified about the levels of shallow aquifer contamination near a drinking water well. Finally, in 1998, 14 parts per billion of MTBE showed up in the well and the well was closed. The oil company suspected of being responsible for the contamination has avoided any cleanup costs while nearby residents have been left with MTBE in their shutdown well. Based on the State Board policy, the owner of the nearby leaking tanks, which was Arco Products, requested a 'low risk' status for the site based on the fact that the wells are more than 250 feet from the tanks. Sacramento County, which was the local authority, authorized the site to be categorized as low risk, and neither the Regional Board nor the State Board ever intervened. In 1997, the county even approved a request to reduce the level of monitoring."*[62]

In Santa Monica's case, if not for the single Regional Water Board employee who hid relevant files under a desk, the State Water Board's policy may have furthered the damage and prevented the finding of the contamination sources, according to Perkins. [See Perkins' testimony in earlier section: *The Scope of the MTBE Catastrophe*].

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[62] February 9, 1999 oral testimony of Bonnie Holmes-Gen

The decision to issue the1995 directive, rather than being based on the reality of the growing MTBE menace, apparently was the result of a 1995 Lawrence Livermore National Laboratory Report, which Holmes-Gen called "pro-industry," "controversial" and inaccurate.

> *"This report, which we believe was a pro industry report, was sponsored by the State Water Board but never scientifically peer-reviewed before its controversial 'no cleanup' conclusions were implemented. It was challenged even by several Regional Board staff and other outside experts and had scientific shortcomings that are too numerous to detail. But suffice it to say that the report, upon which the State Board based its containment zone policy underground tank cleanup policies, used a very unrepresentative, small sample size from which it drew extremely broad conclusions. 64 percent of the scientists surveyed by the Senate Office of Research in early 1996 concluded that the study's conclusions were not supported by the data presented in the report."*[63]

Despite the damaging effects, and "*as the number of drinking water systems with low levels of MTBE increases, the State Water Board has never rescinded its underground tank policy and its so-called containment zone policy,"* said Holmes-Gen. Further she stated, "*It took several years for the State Board to instruct its contractor, Lawrence Livermore Lab, to conduct a separate study of MTBE contamination."*[64]

One of the Lawrence Livermore assertions that were challenged was its conclusion that gasoline contaminants only moved horizontally, not vertically into deeper water aquifers, according to Holmes-Gen, who inferred that the State issued the above referenced directive based on that belief that contaminants only moved horizontally. Meanwhile, gasoline was traveling downward into the water aquifers, said Holmes Gen.

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[63] ibid

"It is important to note and to remind you that this [Lawrence Livermore] report was issued after testing had already shown the potential for migration of fuel hydrocarbons, including MTBE, into deeper aquifers. Since the Lawrence Livermore report, the State Board has stuck to its position that gasoline contaminants migrate horizontally or laterally rather than vertically and pose no threat to deeper aquifers. But MTBE contamination clearly flies in the face of this policy."[65]

At least one scientist's findings and the evidence gathered throughout his jurisdiction contradicted the Lawrence Livermore migration assertion. Seth Daugherty, the staff scientist from County of Orange Health Care Agency, informed the State Water Board of evidence that he discovered for MTBE vertical migration toward deep-water aquifers. Despite Daugherty's findings, after he presented the data to the State Board in January 1996, the State Water Board dismissed the notion. Daugherty discussed his research at the hearing:

"Starting in the early '90s, we initiated more advanced studies in Orange County trying to better understand the important problem of downward migration and movement of contaminants. And our report basically demonstrated that petroleum fuel constituents may be present at depths considerably below the surface of the groundwater. We looked at nine sites and found benzene as deep as 50 feet below the groundwater table and MTBE at 200 feet below the surface of the groundwater table. We had been collecting this data [in] cooperative studies with responsible parties. At the time, we did not have a clear picture. But the fall of 1995 and early 1996 [was] a time of great decisions [on the State level], so we decided to submit [our findings] to the State Board staff. [Rather than trying to] draw any definitive conclusions regarding specific mechanisms or pathways, we simply recommended that we take further measures to delineate the extent of fuel contaminated plumes downward, vertically,

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[64] ibid
[65] ibid

below the groundwater. [We said that] the downward migration contaminants should be further evaluated and incorporated into the regulatory decision-making process. [Current] site assessment studies only look at lateral spreading, but we recognized the real problem is [contamination reaching] the aquifers. The State [Board] said . . . that it is not a significant concern."[66]

The 1995 Lawrence Livermore study, from which the State policy was developed, had other omissions, as it failed to address MTBE and its impacts. Crowley explained:

"In 1995, Lawrence Livermore reported that in traditional gasoline spills, which generally consist of hundreds to thousands of gallons of gasoline, that these spills typically impact less than one acre foot of groundwater in 1995. But MTBE's characteristic [is such that] about one gallon can contaminate up to about 500 acre feet of groundwater, and that basically would be undrinkable at about 5 parts per billion, which is a secondary drinking water standard."[67]

JLAC Chair Wildman specifically asked Happel of the Lawrence Livermore National Laboratories how such discrepancies and omissions could happen, to which she made the following response:

"In that report, the data was collected for that report beginning in early 1994 and ending in January of 1995. At that time there was no MTBE analytical data for any leaking underground fuel tank site here in California. Towards the end of the data collection, which was January 1995, there were some whispers of MTBE among the community, and the group actually went back out and looked for MTBE data, but there was none."[68]

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[66] February 9, 1999 oral testimony of Seth Daugherty
[67] February 9, 1999 oral testimony of James Crowley
[68] February 9, 1999 oral testimony of Anne Happel

Particularly regarding the vertical migration discrepancy, Happel responded as follows:

> *"We know that [MTBE] exists in the shallow subsurface. We don't know how many of the times when it's released to the shallow groundwater that it effects deeper groundwater. With the data at hand, it's impossible to predict with any accuracy where vertical migration will occur."*[69]

The report recommended a risk-based approach in place of prompt clean-up. Happel explained:

> *"The report concluded [with the recommendation] to take a risk-based approach. And if benzene was the contaminant of concern -- and we didn't set the contaminants of concern; the EPA does that -- benzene does biodegrade in the environment. So considering the risk of benzene, a site can undergo rapid degradation over time in the environment. We've taken a very pragmatic approach of developing these information tools that allow people to just identify kind of a basic triage scheme to identify the sites that may pose the highest risk. The idea is that further information would be examined on a site specific level to see what risk the hydrogeologist and others would feel that that site really poses to contaminating deeper subsurface water."*[70]

The risk-based approach, however, has come under criticism by some hydrogeologists, such as Frank Goldman, who said the following.

> *"Risk Based Corrective Action has brought the issue of health risk to light. However, I have found its implementation is often statistically invalid, resulting in many improper [case] closures. Decisions regarding cleanup must be based on unbiased science and by qualified staff who*

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[69] ibid
[70] ibid

have not been exposed to only the special interests who are given a special forum to expound their propaganda."[71]

[71] February 9, 1999 oral testimony of Frank Goldman

The Flaws that Led to the Disasters

I. Poor Leadership

In reviewing departmental performance, the State Auditor concluded that the fundamental breakdown in the protection of California's water was due to a breakdown in leadership, primarily in the DHS, but also at the State Water Board and in some of the regional and local water protection agencies. Sjoberg explained:

> *"The State and local agencies need to take a greater leadership role in dealing with contaminants of all sorts that enter our groundwater. We didn't see the kind of aggressiveness that we would have like to have seen on the part of the department [DHS] in identifying and taking charge as they are empowered to do."*[72]

Fogg also saw fault with the State Water Board, which he said was *"overly cautious in delaying its response to this threat."*[73]

Among a litany of other dire problems, the lack of leadership has caused inconsistent levels of water protection throughout the state, according to Sjoberg.

> *"The lack of the Water Boards taking on an aggressive, specific set of guidelines has caused locals to establish their own. When that happens, whether it's at a Regional Board level or at some local government level, we end up with different levels of vigilance. Over the issue of MTBE for example, one area pursues cleanup or [case] closure based on MTBE in the groundwater at concentrations greater than 200 parts per billion when a water source is within 2,000 feet of the leak. So [in one area, action occurs at] 200 parts per billion, 2,000 feet from the leak. Another area, however, bases its actions for MTBE at 35 parts per billion or more for*

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[72] February 9, 1999 oral testimony of Kurt Sjoberg
[73] February 9, 1999 oral testimony of Graham Fogg

water sources within a mile of the leak. Obviously, depending upon where one resides, there will be a different level of vigilance given to the MTBE issue. We think that's because the State hasn't taken its role as aggressively as it should have and established statewide [guidelines]."[74]

Sjoberg also believed that the DHS should have used its power to issue emergency regulations, which he noted had been used in other circumstances that might not have been as serious as MTBE contamination. He explained:

"Because we've audited the Department of Health Services' other activities, we see, and have seen, a quite liberal use of the emergency regulation process when there is concern on the part of the division, bureau, branch that this could have some impact. Clearly, health and safety are the drivers that must be present to exercise the power of [using emergency regulations.] But I think with respect to DHS, it would be a more accurate picture to say that they chose not to exercise the emergency regulation process. [I say this] because during the same era of time, DHS, in many of its other activities, issued a plethora of emergency regulations that aren't driven by the expansive impacts that would be needed before the law can be met and the rules could be fulfilled. We can share with you examples where the emergency regulation process was implemented or used without the kind of broad-based impact. So I think it's a matter of making decisions and choices."[75]

Further, the State has been remiss in its responsiveness to reports of contamination and clean up effort and follow-up, according to Sjoberg.

"In terms of the regulatory process, we found that the State is not always good at following-up and making sure that things happen when there are identified leaks or problems that should be corrected. There was one leak identified in June of 1992 [for instance]; and as of November '98, it still

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[74] February 9, 1999 oral testimony of Kurt Sjoberg
[75] February 9, 1999 oral testimony of Kurt Sjoberg

hadn't been cleaned up, and no further enforcement or regulatory action had been taken. We had periods of years in which an identified issue, which should have been repaired, was not, and we didn't see continuously greater efforts on the part of the regulators to assure that something's happening. In one case . . . an order was issued ten months later – and among other things, this water district was to report to its customers as to the condition of the water that had been identified in one of the five wells within its operation. But for ten months they didn't do that. So . . . no follow-up to assure that people understand and are hearing about the conditions of water in their own communities."[76]

Holmes-Gen added that the leaders hadn't facilitated production of a master priority cleanup list.

"Because of the lack of leadership in the last administration, the State Water Board and the Department of Health Services, the legislature does not have a prioritized list of shallow aquifer cleanups that are necessary to prevent the continued threat to deeper aquifers in drinking water supplies."[77]

A lackluster leadership may have filtered down into the Regional Boards, according to geologist Jaqueline Lambrichts, who worked for the Los Angeles Regional Board.

"The management at the State Board and [Los Angeles] Regional Board is rigid and obsessed with bean counts, such as the number of cases closed per month in the underground storage tank program. And until recently, at the Los Angeles Regional Board, there was no management of the UST program . . . where thousands of cases were kept in boxes while contamination spread."[78]

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[76] ibid
[77] February 9, 1999 oral testimony of Bonnie Holmes-Gen
[78] February 9, 1999 oral testimony of Jaqueline Lambrichts

II. A Reactive Mode

The procedures used by regulatory agencies has ostensibly been to wait until a contamination or crisis occurs prior to taking action, rather than working to prevent such a crisis to occur, according to Perkins.

> *"The MTBE problem demonstrates that we are following the path of reaction to environmental threats, focused on treatment of symptoms, as opposed to the path of pro-action focused on preventing the threats to our water supplies in the first place and before it is too late. Wouldn't it have been better to spend $10 million on better underground storage tank management, monitoring, testing, and enforcement than to spend $100 million on groundwater cleanup? If we are really serious about protecting our water resources, then we need to think outside of the box, about a new vision and new approaches to preventing pollution. We need to ask the hard questions, and we need to commit ourselves to working together and to arrive not at quick fixes but at long-term solutions."*[79]

Lambrichts concurred with such analysis, maintaining that both MTBE contamination and future contamination was inevitable and would continue to occur without a proactive approach to water protection.

> *"[Because] the mode of the State Water Resource Control Board and the Los Angeles Regional Board is reactive, the MTBE pattern was bound to happen and will happen again. This programming, both engrained as management practice as well as in the availability of monies in regulatory programs, is only for mitigative and remedial efforts."*[80]

Historically, proactive methodologies were used but later dismantled, according to Lambrichts.

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[79] February 9, 1999 oral testimony of Craig Perkins
[80] February 9, 1999 oral testimony of Jaqueline Lambrichts

"There was a Well Investigation Program known as WIP. Over ten years ago AB1803 initiated the statewide program to investigate the sources of contamination in drinking water wells. The program was scrapped because too many problems were found, which required lots of funding and staffing. So instead of a proactive investigative approach by the State, the decision was made to ignore the groundwater program and act only when property was being transferred. The Los Angeles Regional Board Well Investigation Program is the only program of its kind at the nine Regional Boards. But it only exists because of [Federal] Superfund money. [Therefore], it is limited in geographic scope to the Superfund sites and to pollutants of concern to the Superfund Program. So [contamination from] nitrates, which is an issue in that geographic area, [aren't included in the investigations]. We need to change the philosophy on groundwater from a reactive to resource mode. The State Board and Regional Boards need to become groundwater protection agencies, as well as water quality and water rights protection agencies. Just as water storage in reservoirs is a resource, so is groundwater . . . in underground reservoirs."[81]

Fogg agreed, calling prevention "the most *cost-effective thing we can do to address these groundwater contamination problems."* However preventative measures would require a greater understanding about groundwater and the contaminants, a factor which is not supported by the actions of responsible regulatory bodies. He explained.

"In part, we got to this point because of a general lack of understanding of California groundwater systems. Monitoring the condition of California groundwater quality . . . has never been a priority. Consequently, our ability to optimally manage groundwater quality and quantity, as well as to assess the vulnerability of groundwater to contamination, is severely handicapped. Most of our groundwater data sits unanalyzed in cabinets and computers. California's efforts in

[81] February 9, 1999 oral testimony of Jaqueline Lambrichts

assessing groundwater vulnerability to contamination far lag behind those of other states."[82]

III. Poor Information Management and Data Analysis

As Fogg had said, "*Monitoring the condition of California groundwater quality . . . has never been a priority. The information sits . . . unanalyzed."*

The Bureau of State Audits found additional information lapses that compounded agency problems. Some weaknesses were found in data gathering and inconsistent data analysis, according to Sjoberg.

"Information is critical, but it's scattered about. It's at local levels, and it's not consistent as it comes to the State level. We found that critical lab results, testing of the various water sources that roll up to the State's database, are sometimes late. The information varies, depending upon the accuracy of the equipment used for testing, certain thresholds. Certain tests can be done at thresholds that are more refined than others. And that information doesn't always find its way as promptly as it needs to the database system. Also, in regard to the database, there are literally thousands, four or five thousand, small water districts that don't forward their results to the State's system. So while the State has an idea for the larger water systems, and locals may have an idea for the smaller, a statewide look is not available unless that information is in that central State database, even for the smaller water systems."[83]

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The agencies' tardiness in delivering vital information has had debilitating effects, according to Holmes-Gen.

"Information, which should provide an early toxic warning triggering investigations and speeding cleanups, are routinely mired in the agencies. The [Auditor's] report cites a nine-month delay in the Regional Board's

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[82] February 9, 1999 oral testimony of Graham Fogg

investigation of gasoline contamination affecting at least half of Santa Monica's drinking water supply and attributes that delay to a lack of communication between the Department of Health Services and the L.A. Regional Board. Similarly, in the Sacramento case, there was a year-long lack of communication about levels of contamination found dangerously close to an active drinking water well that was eventually shut down. In this case, the State Water Board failed to share its monitoring data showing extremely high levels of benzene, MTBE, toluene, xylene, and other chemicals moving in shallow groundwater in the direction of a drinking water well that was under the jurisdiction of the State's Health Services."[84]

Further, environmental consultants have had trouble accessing such data, which may compromise efforts to protect the environment. Goldman, an environmental consultant who constructs wells and collects samples, made the following statement:

"Unfettered access to public records that is the crux of accountability. How can we protect our supply wells, for example, if we don't know how they were constructed? Access to public records is a frustrating problem statewide. I've heard every excuse in the world as to why the roadblocks set before me are justified. It is my assertion that these obstacles are created by agency managers who wish to keep their records close to the vest and inaccessible to the public."[85]

The GIS

In an effort to prevent such information gaps, the Legislature enacted legislation requiring the State Water Board to establish a Geographic Information System (GIS) by July 1999. The State Water Board then contracted with the Lawrence Livermore Laboratories to complete its prototype, which is underway.

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[83] February 9, 1999 oral testimony of Kurt Sjoberg
[84] February 9, 1999 oral testimony of Bonnie Holmes-Gen
[85] February 9, 1999 oral testimony of Frank Goldman

Simultaneously, the DHS has received Federal funding to create its own GIS. The dual systems, however, raised questions from the auditor about duplicative efforts and need for coordination. "*The right hand and the left hand really need to know how these two things work together*," he said.

Spath indicated, however, that the agencies were working together to coordinate and avoid duplication.

> *"We've been coordinating with the State Water Resources Control Board, as well as a number of stakeholders over the past year, to develop a GIS pursuant to the Federal and State Safe Drinking Water Act, which requires us to establish a source water assessment and protection program. We are making every effort to avoid duplication between the two agencies, but recognizing the two agencies do have certain statutory responsibilities to collect certain types of data."*[86]

Happel concurred with Spath's assertion that the two departments needed different types of information but that when needed, coordination could occur with a link between the two GIS systems over the Internet, she said.

> *"I see it as one total system with complementary parts that concentrate on the contaminant source or the drinking water source. The data that's maintained by the State Water Board for leaking underground fuel tank sites -- for example, analytical information about contaminants in particular monitoring wells, the CUPA information about leak detection systems -- is data that the Water Board is going to be collecting. Integrated in that is data that the California Energy Commission needs to be collecting. The database that supports the GIS system being developed by the Water Board is related to contaminant sources. Analogously, the data that's being maintained already in an analytical database by the Department of Health Services and is being expanded through their*

[86] February 9, 1999 oral testimony of Dave Spath

Source Water Protection Program, is data about drinking water sources. Now, in order for these systems to interact, they'll link electronically over the Internet. The Department of Health Services will only want a portion of the data supplied by this database, and we -- the Water Board -- will only need a portion of the data supplied by the Department of Health Services. So the coordination comes in when making sure that the elements that are tracked by each agency are the ones that are required for the other agency to do their job, as well as for their own agency to do their job, and that there is a good mechanism for this information to update these systems."[87]

Sjoberg, however, believed that a more integrated approach was necessary requiring the two agencies to coordinate in a broader context than they appeared to be doing.

"While it clearly is a communication challenge, and each of the departments and boards has its own responsibilities, we have to be sensitive on the State level to assure that each also understands they have a broader responsibility than their focused mission. And that broader responsibility relates to the statewide effect of many of the things that they're dealing with and that effect upon others. And I think that there will clearly need to be an educational program to do that, to heighten everyone's attention to those things, and then, further, to communicate that to the appropriate parties so that we can get the information that's needed. I would also say as it relates to the GIS system, it's critical. Because toxics and pesticide regulation – all those other players are as critical as well in identifying those sources and make sure that they're properly mapped."[88]

The GIS, however, will not be completed and usable for several years, which Sjoberg said is too long: *"Three to six years is too long to put that GIS into place."*[89]

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[87] February 9, 1999 oral testimony of Anne Happel
[88] February 9, 1999 oral testimony of Kurt Sjoberg

One stumbling block in the GIS's rapid delivery is due to an antiquated method of locating wells, Happel explained:

> *"We know where approximately these gasoline releases have occurred [because] they've occurred at businesses that have addresses. However, the public drinking water wells were dependent on information that was obtained by now-outdated methods, also latitudes, longitudes obtained off of township range maps. And the error in the location . . . for over 70% of the locations . . . are further than 1,000 feet off the mark. This data is good at the kilometer scale, at the statewide scale, but to a local regulator, this data is meaningless because what he's looking for is to be able to identify sites that are within a couple thousand feet of his drinking water well, or within 1,000 feet of his recharge zone. I'd really urge the legislature to do whatever is necessary – appropriate funds, create legislation, whatever – to gather the data in a time frame that's more suitable, like this present year, so that local oversight agencies and water boards can have a better chance of doing their jobs effectively."*[90]

Sjoberg maintained that inexpensive technology that currently exists could assist the rapid completion of the GIS.

> *"The technology is such now that for relatively inexpensive devices one can actually identify through tracking of satellites, hand-held devices, some fairly accurate positioning of anything that you want to test. Clearly, there may be a time for a full initiative to get the 4,000, 5,000 water districts to report where their wells are located, which could be done, again, by $100 pieces of equipment that are hand-held."*[91]

Other types of information are also difficult to come by, according to Happel. She provided one example of this difficulty:

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[89] February 9, 1999 oral testimony of Kurt Sjoberg
[90] February 9, 1999 oral testimony of Anne Happel
[91] February 9, 1999 oral testimony of Kurt Sjoberg

"Right now we have no statewide list of active gasoline stations, which has limited the ability of the California Energy Commission to perform its analysis. We've had to call every local Air Board that regulates and permits the air permits for each of these sites and get a list, mostly electronically, sometimes on paper, from each agency. We have to go to all of these different sources, gather the information from every local agency, standardize the information, and then cross correlate it to confirm and verify because we don't believe anyone's list is going to be complete or 100% accurate. This database has to be populated with accurate information, and you have to insure mechanisms for future entry of accurate information."[92]

Pursuant to the legislation, which sets a July 1999 deadline, as of February, the Lab had already incorporated a considerable amount of data. Happel provided details:

"We integrated the distribution of leaking underground fuel tank sites, approximately 33,000 cases, and the 11,000 community and non-transient public wells to show the density of leaking underground fuel tanks surrounding a public drinking well. We've displayed the same 11,000 public drinking water wells and color-coded them because we've included some analysis here into positions where the well is actually surround by a number of LUFT sites, going green being zero and over ten being the darkest red. This is a very, very preliminary type of screening tool. But it shows you the value of using locational information because now a regulator can quickly begin to prioritize resources, manpower, and time to try and clean up or further characterize or investigate sites that are in closest proximity to affecting our groundwater resources. 'I' shows that the correlation between where people drive and fill up their tanks with gas and where they drink water is very good."[93]

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[92] February 9, 1999 oral testimony of Anne Happel
[93] ibid

Once the GIS is completed, it will simplify a number of tasks, Happel stated.

> *"Besides just locational data, a data management system can greatly help improve the way we manage leaking underground fuel tank sites here in California. It provides site specific information that's needed by the individual water board caseworker, so instead of managing stacks and stacks of paper, the worker will now have access to tools to track data, to analyze data, to do a better job in deciding on cleanup decisions for a site. It will also track information on tank and piping construction and leak detection systems that are present at each site. It also allows one to do, for example, a mass mailing about a system that's failed, to alert other users, to give education, to give notification. It allows you to have a much better handle on trying to move forward in the future. Tracking the information in a data management system about our leaking underground fuel tank sites that's connected to a GIS facilitates oversight management of leaking storage tanks by all interested parties."*[94]

The two GIS systems, alone, without proper analysis, however, are still insufficient to prevent a future catastrophe, according to Fogg.

> *"The GIS . . . is a good start, but it needs to [include] for other kinds of contamination sources, not just leaking tanks. And while an inventory of all the wells is helpful, the GIS alone is not sufficient for groundwater vulnerability analysis. You also must have trained subsurface hydrologists to interpret these data, and you must have a better understanding of the groundwater systems in which the contaminants are occurring.*[95]

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[94] February 9, 1999 oral testimony of Anne Happel
[95] February 9, 1999 oral testimony of Graham Fogg

Happel indicated that while the system may include other contaminant sources, neither she nor the agency heads addressed the data's analysis, as Fogg indicated would be necessary. Happel reported the following:

> *"[The GIS] is designed to track and maintain all the information about a contaminant site, in this case a leaking underground fuel tank site in one location. It also gives all of those parties easy access to this information if they have an Internet connection. All they have to have is a browser, something that they would answer e-mail on. So they don't have to have any complicated software. So it does allow people access to this information as long as they have an Internet connection."*[96]

IV. Lax Enforcement

Witnesses concurred that stronger enforcement was necessary to protect California's waters. Goldman explained:

> *"The water code in its current form does not effectively hold responsible parties [contaminators] accountable for non-compliance. Although it requires the Water Board to take action against non-compliant responsible parties, it is common practice for Board staff to routinely not penalize responsible parties who fail to comply with agency requirements. [This is particularly prevalent with] larger responsible parties who have the money and resources to better defend themselves in the technical and legal arena. The environmental regulatory community generally follows the current political agenda. If that agenda does not promote environmental enforcement, the regulators will continuously rationalize that more and more contamination is acceptable to leave in the ground without creating undue risk. The fallacious idea that holding only the top management of these regulatory agencies accountable will somehow change the current system is naïve."*[97]

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[96] February 9, 1999 oral testimony of Anne Happel
[97] ibid

Jack Miller, Director of Environmental Health for Orange County, a local oversight agency, suggested changing the violation status from that of a civil violation to that of a criminal one. He explained:

> *"We conduct oversight of contaminated sights, and our responsibility is for the installation, removal, the permitting, inspection, enforcement of underground tanks. Currently, violations of underground state tank law are civil violations. But you need criminal violations to get the attention of the businesses . . . Our District Attorney's Office also indicates that you need more teeth in your law. I think [we need] something to give the local agencies other tools to deal with tank violations . . . and for the district attorney to pursue."*[98]

Crowley added the need to financially penalize tank owners who have not complied with orders to investigate and perform required clean up.

> *"Any system with evidence of leakage should be required to perform prompt corrective action, investigation and cleanup. Tank owners and operators should be required to follow best management practices to insure the facility operations minimize and to the extent possible, prevent leakage. The reluctance of tank owners and operators to promptly investigate will ultimately cost the State hundreds of millions of dollars in additional cleanup costs and loss of water supplies. The State needs to develop enforcement mechanisms and incentives to insure that tank owners promptly investigate and clean up their contamination. When responsible parties don't comply, we need to be able to do something to get them to do investigation. We're suggesting, in particular, that the Cleanup Fund be looked at as a mechanism for insuring that those parties that delay cleanup and don't comply with agencies' requests, that we reduce the amount that they can be reimbursed for, which is up to $1 million. We can create a disincentive . . . hit them for potentially 10 to*

50% of the total reimbursement for delays in cleanup. We need the penalties. And we need timely and effective enforcement actions against responsible parties."[99]

V. Lax Inspection Policy

Further, the State policy requires inspection only every three years, which witnesses said, is too infrequent. Miller's Orange County Agency stepped up inspection criteria three fold.

"Currently in law, minimum inspection frequency is once every three years. Orange County has established by policy an inspection frequency of once a year. I [encourage] the State to consider changes to improve their surveillance, which will improve the overall efforts to prevent leaks."[100]

Poor Synergy and No Single Accountability Among State Agencies and Regional Regulators

Among the Committee's concerns, members raised the issue of the complex regulatory structure, which seemed confusing, with no single accountability mechanisms. Sjoberg concurred.

"When there is a lack of central accountability, a single source of accountability, without regard to the number of stakeholders, problems arose. Obviously in all those programs, there are multiple stakeholders, but there still needs to be an ultimate person who makes that final decision, or entity. CalEPA and the state and Regional Boards might be

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[98] February 9, 1999 oral testimony of Jack Miller
[99] February 9, 1999 oral testimony of James Crowley
[100] February 9, 1999 oral testimony of Jack Miller

able to break down any of the regional potentially parochial interests that might reside to insure the free flow of information, which is a critical element here. We also saw some instances of someone on a regional level making judgments that ought to be protocol driven with more open communication. Certainly with the electronic media available, that should be made easier in the current times."[101]

Fogg also saw a need for interaction and joint-decision-making between other regulatory agencies.

"There was obviously a disconnect between the ARB and the water regulatory agencies. A joint risk assessment for air and water resources should have been performed"[102]

Regional Water Board personnel concurred with the need for more inter-agency coordination. In post-hearing interviews, regional regulators told the JLAC consultant that coordination between their agency and other environmental protection agencies such as the Department of Toxic Substances Control would allow them to better track the sources of water contamination.[103]

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[101] ibid
[102] February 9, 1999 oral testimony of Graham Fogg
[103] Post hearing interviews with Regional Water Board employees

Agency Responses

I. Knowledge of MTBE

Responsible agencies indicated that despite the availability of information, they didn't know about the impending MTBE crisis. Pettit spoke on behalf of the State Water Board:

> *"Regardless of what we should have known, we didn't. Nowadays, I see all sorts of reports going back to the '70s and '80s about MTBE, but in the days when it was happening, we didn't. The first I ever heard of MTBE in connection with gasoline was in 1995, and in discussions with other State Board and Regional Board staff, I think they were in the same boat. So regardless of what we should have known, 1995 was the turning point for us. For about 10 to 12 years prior to the Livermore report, we had been chasing gasoline plumes, primarily benzene. We commissioned Livermore to look at the efficacy, partly as a result of questions that were posed by US EPA. In 1995 there started to be questions about MTBE coming up. However, the Regional Board members and the State Board members were hearing about lots of benzene in short distances, and very little impact on groundwater wells, supply wells. We were aware that the Air Resources Board was changing the formulation of gasoline. But we had always viewed gasoline as this black box that contained a host of different constituents, some of them much more toxic than MTBE. For one reason or another, we did not anticipate that this change in reformulated gas would basically change the behavior of gasoline when it leaked from those tanks. I think we're going to have to be more vigilant about trying to make sure it doesn't recur."*[104]

[104] February 9, 1999 oral testimony of Walt Pettit

Pettit indicated that mounting pressure from tank owners coupled with the recommendations of the Lawrence Livermore Report led to the highly-criticized 1995 State Policy to rapidly close contamination cases without taking action.

> *"The Regional Board members, my State Board members and legislators were coming under tremendous pressure about our forcing responsible parties to spend large sums of money to clean up these instances that apparently didn't have any detrimental effect on water supplies. That pressure in those days became rather intense, and we didn't have any record of the damage MTBE was causing. The guidance we sent to the Regional Boards and the local oversight agencies in December of '95 resulted from a meeting that the State Board Chair and I had with the chairs of all nine Regional Boards. The chairs of all Regional Boards requested that that guidance be sent out in that form because they were being flatly bombarded by these allegations that we were requiring inordinate amounts of cleanup. And the Lawrence report, again, looking just at benzene -- they weren't charged with looking at MTBE – seemed to back up that claim. So the decision was made by the Regional Board Chairs and our Chair. They felt something had to be done with respect to these low priority sites. That guidance went out at about the same time that we were starting to hear about MTBE, and as a result of our concerns about MTBE, we did a couple of things. The Air Board and the Water Board jointly started advising the administration about the questions that were coming up with respect to MTBE. We didn't have the answers, and I think the number of studies that have been generated over the past three or four years is probably an indication that there isn't any simple answer to this. The minute an initial draft of the infamous guideline was published, which wasn't even intended to be a public draft, everybody started raising the same questions about the inadequate information. The basic conclusion was how can you proceed with a policy when all these questions are pending? Now we have a UC study, we have a further*

Livermore study, we have the Task Force reports. This is the information that we needed, and I think things are finally coming to a conclusion."[105]

Similarly, the Department of Health Services felt it hadn't received enough information to indicate the probability of a pending disaster. Spath explained:

"In 1990 we did discover two wells at the Presidio that were contaminated with MTBE. However, MTBE was one of a myriad of chemicals in those wells, and when my field staff looked, they didn't necessarily find anything unusual. This was a highly contaminated groundwater area that contained gasoline contaminants and contaminants from other industries, such as solvents from dry cleaners. So we did not find that to be an unusual occurrence that would have stimulated us to carry out a statewide program. We have been telling water systems and laboratories for the past eight to nine years to report chemicals that they are required to monitor and any additional chemical that they find. The Presidio finding is an example of that. MTBE was not a required chemical, but the laboratory found something unusual. They reported it to us. The Santa Monica situation is the same situation. If it weren't for the fact that the laboratory was following essentially our instructions to identify additional chemicals, we may never have known about that situation. So with the monitoring that went on from 1990 to 1995 using that policy, no one reported to us that MTBE was found in any of their wells where they were looking for chemicals associated with gasoline contamination, like benzene, toluene, etc."[106]

II. Regarding Poor Use of Emergency Regulations

Spath disagreed with the Auditor's criticism of the DHS's withholding emergency regulations. He explained his rationale:

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[105] ibid
[106] February 9, 1999 oral testimony of Dave Spath

"The emergency rule provision in the Administrative Procedures Act requires that there be a public health issue or a public welfare issue. And at the time in which we were looking at regulating MTBE, there was one water system that had MTBE problems. That did not suggest to us that this was a statewide problem that was going to present a public health risk to the citizens of California, nor did it necessarily suggest that it was going to affect the public welfare either. We looked at the law and did not feel that [emergency regulations] met the letter of the law. I can't speak to other divisions within the department and how they pursue emergency regulations. But we don't generally go forward with emergency regulations unless they meet that statutory requirement. So we did the next best thing. The water system reaction -- as the City of Santa Monica has suggested to you -- was a very prudent reaction to our recommendation that they begin monitoring."[107]

III. Regarding Poor Synergy

Both agencies agreed that coordination could be improved. Specifically, Pettit admitted the following:

"We have this rather complex structure just with regard to the tank problem that involves local agencies at two or three different levels, the implementing agencies, the oversight agencies, our Regional Boards, the State Board, and now the CUPAs, who are all involved in different aspects of it. It's been a fairly complex coordination issue, and we agree we need coordination."[108]

Spath also concurred that greater coordination was needed.

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[107] February 9, 1999 oral testimony of Dave Spath
[108] February 9, 1999 oral testimony of Walt Pettit

"Let me just add that Walt [Pettit] is right. We need to improve our lines of communication. We're attempting to do that. I think we've been successful, however, in the past in sharing information, and it's not only with the State Water Resources Control Board but also the Regional Boards, the Department of Pesticide Regulation on agricultural chemicals. We have a number of partners that we have to share with."[109]

IV. Regarding Better Enforcement

At the State Water Board, Pettit said that the MTBE breakdown resulted from agency backlogs and a lack of preparedness for the rapid infestation of MTBE.

"I think we were overwhelmed by the number of cases, and we were blindsided, about MTBE. We certainly can't claim the lack of authority at least at the State Board. We've got the legal tools that we need. And the Regional Boards certainly don't lack authority. They have authority under the State's Porter-Cologne Act to basically go after any actual impairment or threat to water quality, so it's a matter of finding an instance where you think there's a problem. We certainly have learned from this case history and probably will need to be more diligent in looking at similar situations that might arise."[110]

Spath, however, defended the DHS's enforcement activities.

"We think that we are very aggressive in our efforts to regulate public water systems. Last year we took more than 230 enforcement actions and also issued approximately 26 citations to water systems. So we feel that our program is a very aggressive program and is protecting public health more than adequately. We made efforts to try to assess the problems facing public water systems and integrate that into all our other activities in terms of enforcement and surveillance. The passage of the 1996 Safe

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[109] February 9, 1999 oral testimony of Dave Spath
[110] February 9, 1999 oral testimony of Walt Pettit

Drinking Water Act at the Federal level and then the California Act gives us a number of added tools to address the issues that you are raising."[111]

Further, Spath defended DHS's standard-setting procedures and aggressiveness.

"The Department believes that over the past two decades we've taken very prudent measures in adopting regulations, both for drinking water standards and monitoring requirements to address contaminants associated with gasoline. Some of the examples would be benzene, which we regulated in 1989, and other contaminants. We adopted a monitoring requirement for MTBE in 1997, and most recently we adopted a secondary drinking water standard for MTBE of five parts per billion."[112]

Because the California Health and Safety Codes stipulate that California standards shall exceed Federal standards, JLAC Chair Wildman asked about raising the standards. Spath responded as follows:

"There's nothing to preclude us from setting drinking water standards and monitoring requirements that are more strict than the Federal requirements. We have regulated MTBE well before the Federal requirements, albeit at the behest of the legislature. There are other contaminants -- we have most recently detected a chemical called perchlorate, which is associated with explosives and rocket fuel. We were the first state to develop a monitoring requirement, an analytical test for that chemical. We sampled up and down the state in vulnerable areas for that particular chemical. We have spurred the Federal government to move towards doing research on the health implications of that chemical. We're probably three or four years ahead of the Federal government with regard to standards. Frankly, I would say with all confidence, we don't take a back seat to the Federal government in our regulatory efforts."[113]

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[111] February 9, 1999 oral testimony of Dave Spath
[112] ibid
[113] ibid

Current Efforts and Changes

Since the audit, the agencies have told the Bureau of State Audits and the Committee that they have embarked on more coordinated efforts among both Department heads and field staff. The DHS has instructed its staff to be more diligent in delivering information and have asked them to review policy for greater consistency, Spath said.

Further, the DHS has proposed regulations that require electronic submission of water quality data so that it may immediately be entered into the database.

The State Board is simultaneously developing guidance for case management and cleanup while identifying vulnerable groundwater basins, particularly known recharge areas in order to remove MTBE contamination. Meanwhile, the Agency is attempting to minimize the release of MTBE in groundwater by trying to assure compliance with the December 22, 1998, tank upgrade compliance date.

Simultaneously, the California Air Resources Board recently adopted new emission controls on two-stroke engine, which should help considerably with respect to MTBE discharges to surface waters.